identifying a natural period of the ink pressure fluctuation in the pressure chamber of the assembled recording head based on a plurality of measurements; and

classifying the assembled recording head into a plurality of ranks, based on the measured natural period.

2. (Amended) The manufacturing method as set forth in claim 1, wherein the identifying step includes the steps of:

supplying an evaluation signal including at least an excitation element which excites the ink pressure fluctuation, and an ejection element which follows the excitation element to eject the ink droplet from the nozzle orifice;

measuring an ejected amount of the ink droplet at plural times while varying a time period between a termination end of the excitation element and an initial end of the ejection element; and

identifying the natural period based on a correlation between the time period and the measured ink amount.

3. (Amended) The manufacturing method as set forth in claim 2, wherein the time period includes at least:

a first time period which is determined such that the ejected ink amount becomes minimum when the natural period is as per a designed criterion;

a second time period which is shorter than the first time period; and

a third time period which is longer than the first time period.

5. (Amended) The manufacturing method as set forth in claim 4, wherein the time period includes at least:

a first time period which is determined such that the ejection speed becomes minimum when the natural period is as per a designed criterion;

a second time period which is shorter than the first time period; and

a third time period which is longer than the first time period.

6. (Amended) The manufacturing method as set forth in claim 2, wherein duration of the excitation element is equal to the natural period as per a designed criterion or less.

19. (Amended) The recording apparatus as set forth in claim 17, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber such an extent that an ink droplet is not ejected from the nozzle orifice;

an ejection element, which follows the expansion element to contract the pressure chamber to eject an ink droplet from the nozzle orifice;

a holding element, which follows the ejection element to hold the contracted state of the pressure chamber for a predetermined duration; and

damping element, which follows the holding element to expand the pressure chamber to damp vibration of a meniscus of the ink in the nozzle orifice; and

wherein the waveform controller defines the duration of the holding element.

20. (Amended) The recording apparatus as set forth in claim 17, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber to pull a meniscus of ink in the nozzle orifice toward the pressure chamber;

an ejection element, which follows the expansion element to contract the pressure chamber to eject a center portion of the meniscus as an ink droplet; and

a damping element, which follows the ejection element to expand the pressure chamber to damp vibration of the meniscus; and

wherein the waveform controller defines the duration of the damping element.

21. (Amended) The recording apparatus as set forth in claim 17, wherein the drive signal is provided with a drive pulse including:

an ejection pulse, which ejects an ink droplet from the nozzle orifice;

a damping pulse, which follows the ejection pulse to damp vibration of a meniscus of ink in the nozzle orifice; and

a connecting element, which connects a termination end of the ejection pulse and an initial end of the damping pulse; and

wherein the waveform controller defines duration of the connecting element.

22. (Amended) The recording apparatus as set forth in claim 17, wherein the drive signal is provided with a plurality of drive pulses for driving the pressure generating element and a connecting element which connects a termination end of a preceding drive pulse and an initial end of a subsequent drive pulse; and

wherein the waveform controller defines duration of the second connecting element.

24. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber such an extent that an ink droplet is not ejected; and

an ejection element, which follows the expansion element to contract the pressure chamber to eject an ink droplet from the nozzle orifice; and

wherein duration of at least one of the first expansion element and the first ejection element is defined by the waveform controller.

25. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber such an extent that an ink droplet is not ejected; and

an ejection element, which follows the expansion element to contract the pressure chamber to eject an ink droplet from the nozzle orifice; and

wherein a potential difference between an initial end and a termination end of at least one of the expansion element and the ejection element is defined by the waveform controller.

26. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber such an extent that an ink droplet is not ejected;

a holding element, which follows the expansion element to hold the expanded state of the pressure chamber; and

an ejection element, which follows the expansion element to contract the pressure chamber to eject an ink droplet from the nozzle orifice; and

wherein the waveform controller defines duration of the holding element.

27. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a pulse including:

an expansion element, which expands the pressure chamber to pull a meniscus of ink in the nozzle orifice toward the pressure chamber; and

an ejection element, which follows the expansion element to contract the pressure chamber to eject a center portion of the meniscus as an ink droplet; and

wherein duration of at least one of the expansion element and the ejection element is defined by the waveform controller.

28. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber to pull a meniscus of ink in the nozzle orifice toward the pressure chamber; and

an ejection element, which follows the expansion element to contract the pressure chamber to eject a center portion of the meniscus as an ink droplet; and

wherein a potential difference between an initial end and a termination end of at least one of the expansion element and the ejection element is defined by the waveform controller.

29. (Amended) The recording apparatus as set forth in claim 23, wherein the drive signal is provided with a drive pulse including:

an expansion element, which expands the pressure chamber to pull a meniscus of ink in the nozzle orifice toward the pressure chamber;

a holding element, which follows the expansion element to hold the expanded state of the pressure chamber; and

an ejection element, which follows the holding element to contract the pressure chamber to eject a center portion of the meniscus as an ink droplet; and

wherein the waveform controller defines duration of the holding element.

35. (Amended) A ink jet recording head, manufactured by the method as set forth in any one of claims 1 to 13, 38 or 39.

Please add the following new claims 38 and 39:

38. (New) The manufacturing method as set forth in claim 4, wherein duration of the excitation element is equal to the natural period as per the designed criterion or less.

39. (New) The manufacturing method as set forth in claim 38, wherein the duration of the excitation element is equal to one half of the natural period as per the designed criterion or less.